查询HMC296MS8供应商

HMC296MS8

LOW LO DRIVE DOUBLE-BALANCED FET MIXER, 1.1 - 1.7 GHz

Typical Applications

The HMC296MS8 is ideal for:

- Miniature Basestations
- PCMCIA
- Portable Wireless
- WirelessLAN

Features

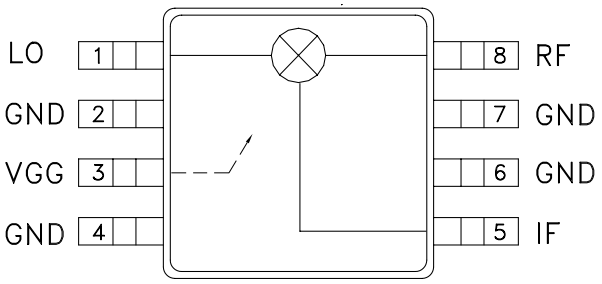
IP3 (Input): +24 dBm @ +11 dBm LO

LO Range = +3 to +11 dBm

Conversion Loss: 7 dB

LO/RF Isolation: 40 dB

Functional Diagram



General Description

The HMC296MS8 is a low LO drive, high IP3 double-balanced FET mixer in an 8 lead plastic surface mount MSOP package. This MMIC mixer is constructed of switched GaAs FETs and novel planar transformer baluns on the chip. The device can be used as an up or downconverter for 1.1 to 1.7 GHz applications. The consistent MMIC performance will improve system operation. The package dimensions are 0.118" x 0.192" (3.0mm x 4.9mm).

Electrical Specifications, T_A = +25° C, As a Function of LO Drive, Vgg = -1.5 Vdc

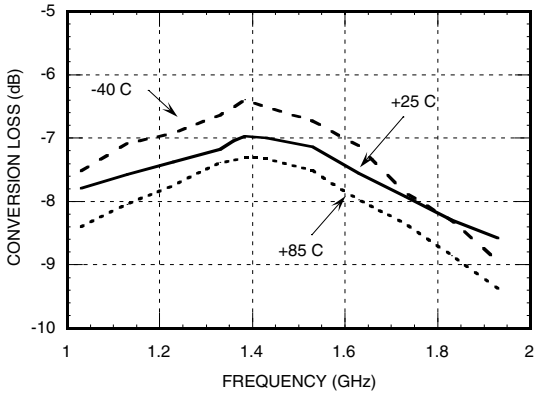
Parameter	LO = +11 dBm			LO = +7 dBm			LO = +3 dBm			Units
	Min.	Typ.	Max.	Min.	Typ.	Max.	Min.	Typ.	Max.	
Frequency Range, RF & LO	1.1 - 1.7			1.1 - 1.7			1.2 - 1.6			GHz
Frequency Range, IF	DC - 0.7			DC - 0.5			DC - 0.4			GHz
Conversion Loss		7	10		7.5	10.5		7.5	11.5	dB
Noise Figure (SSB)		7	10		7.5	10.5		7.5	11.5	dB
LO to RF Isolation	30	40		35	40		35	40		dB
LO to IF Isolation	21	26		22	26		22	26		dB
IP3 (Input)	20	24		15	18		11	14		dBm
1 dB Gain Compression (Input)	10	14		6	9		2	4		dBm

*Unless otherwise noted, all measurements performed as downconverter, IF= 70 MHz.

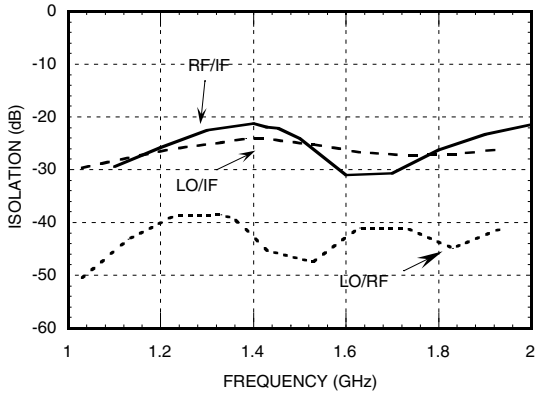
For price, delivery, and to place orders, please contact Hittite Microwave Corporation:
12 Elizabeth Drive, Chelmsford, MA 01824 Phone: 978-250-3343 Fax: 978-250-3373
Order Online at www.hittite.com

LOW LO DRIVE DOUBLE-BALANCED FET MIXER, 1.1 - 1.7 GHz

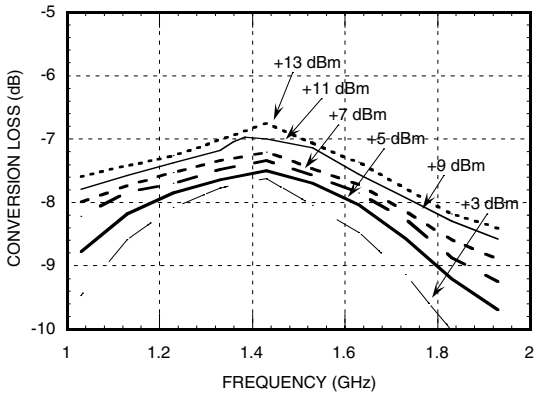
Conversion Loss vs. Temperature @ LO = 11 dBm



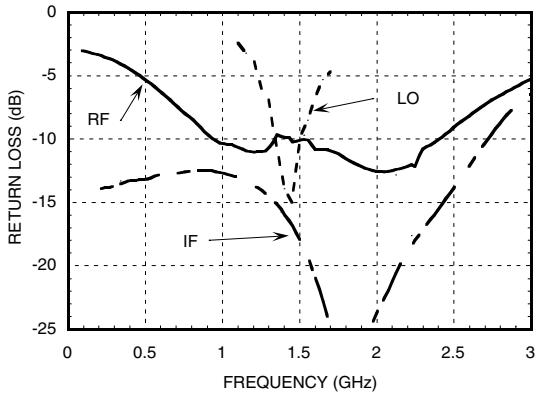
Isolation @ LO = 11 dBm



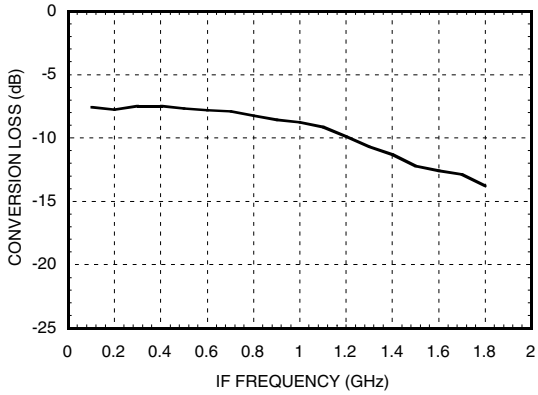
Conversion Loss vs. LO Drive



Return Loss @ LO = 11 dBm

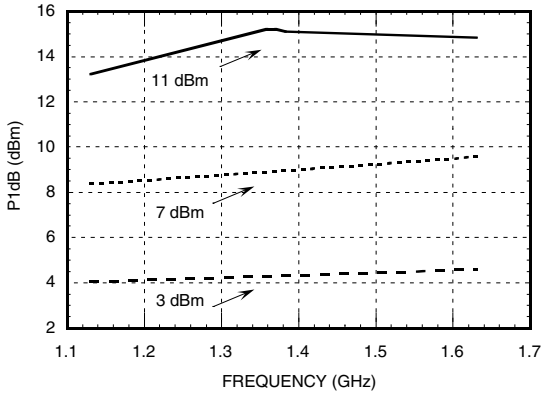


If Bandwidth @ LO = 11 dBm

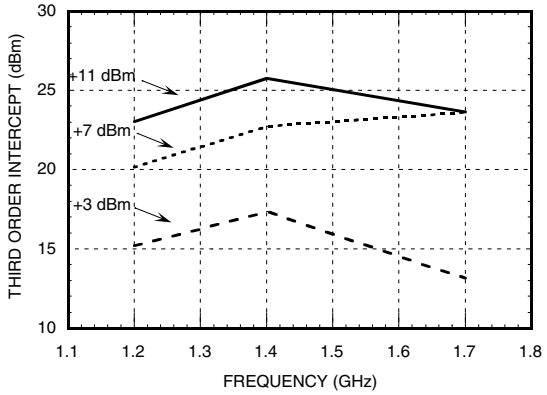


LOW LO DRIVE DOUBLE-BALANCED FET MIXER, 1.1 - 1.7 GHz

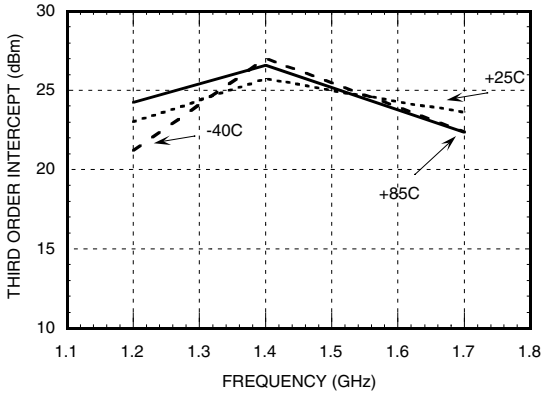
P1dB vs. LO Level, Vgg = -1.5 V



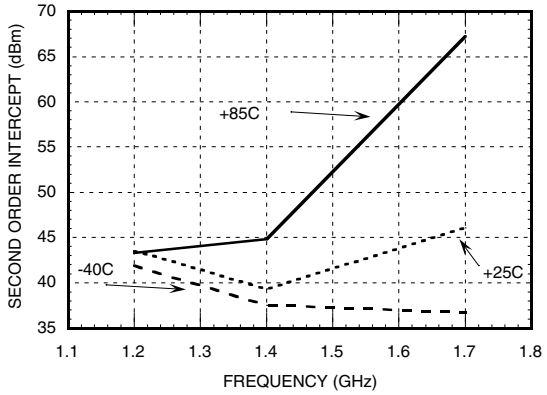
Input IP3 vs. LO Drive *



Input IP3 vs. Temperature @ LO = 11 dBm*



Input IP2 vs. Temperature @ LO = +11 dBm*



MxN Spurious Outputs

	nLO				
mRF	0	1	2	3	4
0	xx	-35	0	29	18
1	17	0	33	14	34
2	48	67	47	55	51
3	79	76	70	89	72
4	>105	>106	>102	99	92

RF = 1.47 GHz @ -10 dBm
LO = 1.4 GHz @ 11 dBm, Vgg= -1.5V
All values in dBc relative to the IF

Harmonics of LO

	nLO Spur at RF Port			
LO Frequency (GHz)	1	2	3	4
1	41	27	47	45
1.2	27	25	41	47
1.4	30	22	42	44
1.6	29	23	54	52
1.8	36	29	57	57
2	27	29	60	59

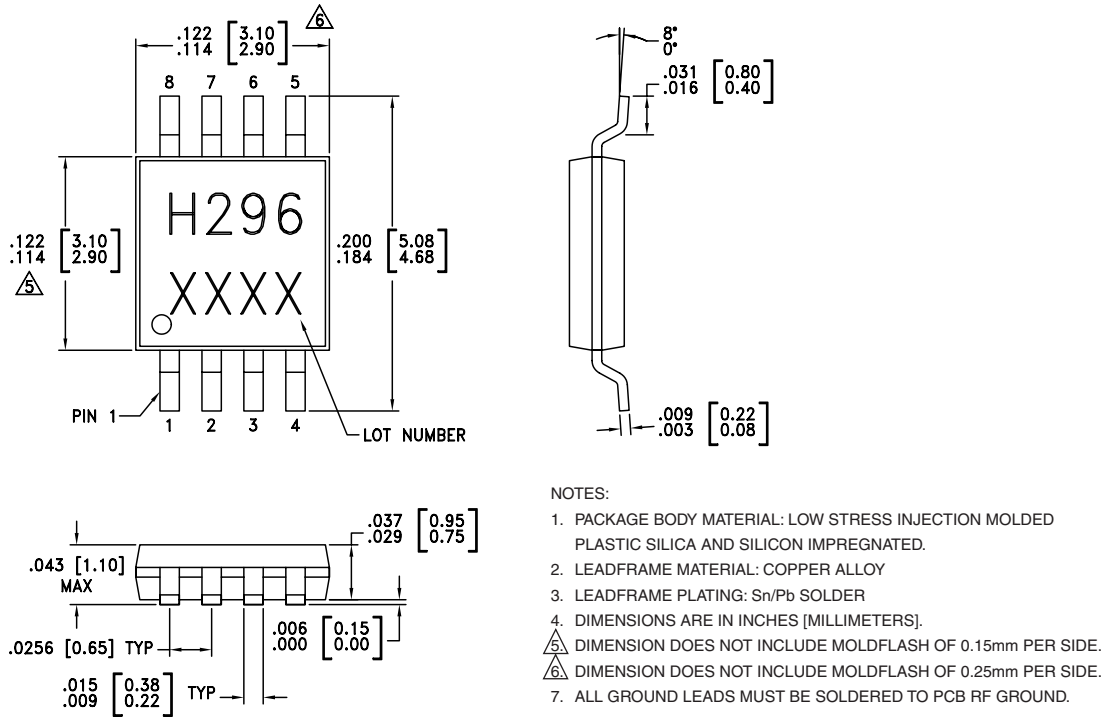
LO = 11 dBm, Vgg= -1.5V
Values in dBc below input LO level measured at the RF port.

** Two-tone input power = 0 dBm each tone, 1 MHz spacing.*

Absolute Maximum Ratings

RF / IF Input	+20 dBm
LO Drive	+27 dBm
Storage Temperature	-65 to +150 °C
Operating Temperature	-40 to +85 °C
Vgg	-10V

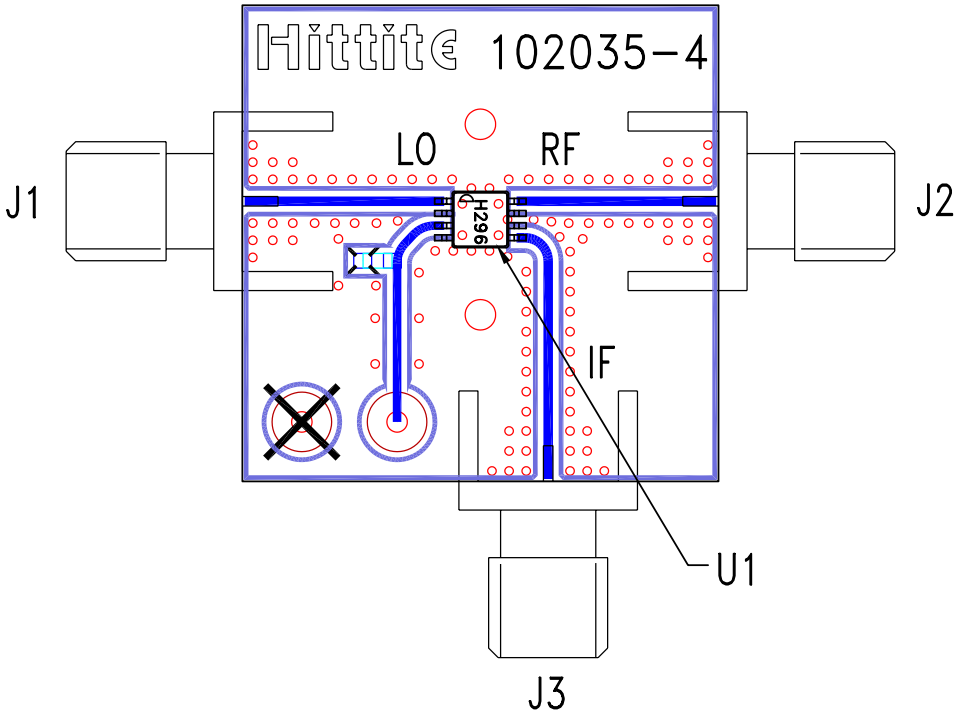
Outline Drawing



NOTES:

1. PACKAGE BODY MATERIAL: LOW STRESS INJECTION MOLDED PLASTIC SILICA AND SILICON IMPREGNATED.
2. LEADFRAME MATERIAL: COPPER ALLOY
3. LEADFRAME PLATING: Sn/Pb SOLDER
4. DIMENSIONS ARE IN INCHES [MILLIMETERS].
5. DIMENSION DOES NOT INCLUDE MOLDFLASH OF 0.15mm PER SIDE.
6. DIMENSION DOES NOT INCLUDE MOLDFLASH OF 0.25mm PER SIDE.
7. ALL GROUND LEADS MUST BE SOLDERED TO PCB RF GROUND.

Evaluation PCB



List of Material

Item	Description
J1 - J3	PC Mount SMA F Connector
U1	HMC296MS8 Mixer
PCB*	102035 Eval Board
* Circuit Board Material: FR4	

The circuit board used in the final application should use RF circuit design techniques. Signal lines should have 50 ohm impedance while the package ground leads and exposed paddle should be connected directly to the ground plane similar to that shown. A sufficient number of VIA holes should be used to connect the top and bottom ground planes. The evaluation circuit board shown is available from Hittite upon request.

Notes: